

CLAIMS

We claim:

1. A drive belt for a passenger conveyor, comprising:
an inner side adapted to engage a drive member; and

5 an outer side including a plurality of teeth that are adapted to engage a corresponding portion of a step chain, the outer side teeth each including a base and a compressible projection distal from the base.

2. The belt of claim 1, wherein the compressible projections are rounded.

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3. The belt of claim 1, wherein each of the teeth includes a generally concave surface extending between the projection and the base.

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4. The belt of claim 1, wherein the teeth each have an engaging surface profile that includes the compressible projection, the engaging surface including a first concave portion having a first radius of curvature beginning adjacent the base, a second concave portion having a second radius of curvature adjacent the first portion and a third concave portion having a third radius of curvature extending between the second portion and the projection.

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5. The belt of claim 4, wherein the teeth each have a height dimension and wherein the first radius of curvature is approximately one-sixth of the height dimension, the second radius of curvature is at least six times the first radius and the third radius of curvature is at least three times the first radius.

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6. The belt of claim 4, wherein the projection has a first section with a first projection radius of curvature adjacent the third portion and a second section with a second projection radius of curvature extending between the first section and the distal end.

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7. The belt of claim 6, wherein each of the teeth have a height dimension that is approximately 7 mm, the first radius is approximately 1.2 mm, the second radius is approximately 8 mm, the third radius is approximately 4.5 mm, the first projection radius is approximately 3 mm and the second projection radius is approximately .5 mm.
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8. The belt of claim 1, wherein the teeth each include a relief near the projection that increases the compliance of the tooth near the projection.
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9. The belt of claim 1, wherein the teeth comprise a urethane material.
10. The belt of claim 1, including a second plurality of teeth on the inner side and wherein the plurality of teeth on the outer side have a first pitch that is different than a second pitch of the second plurality of teeth.
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11. The belt of claim 10, wherein the second pitch is finer than the first pitch.
12. The belt of claim 11, wherein the second pitch is approximately one-half of the first pitch.
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13. A drive assembly for a passenger conveyor, comprising:
a step chain having a plurality of links each having a plurality of engaging members;
a drive mechanism; and
5 a belt having an inner side that cooperates with the drive mechanism and an outer side including a plurality of teeth having engaging surfaces that are at least partially concave and that cooperate with the engaging members on the step chain so that movement of the drive mechanism causes movement of the belt which causes movement of the step chain.

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14. The assembly of claim 13, wherein the step chain engaging members include teeth having a convex surface that is at least partially received within the concave portion of the belt teeth engaging surfaces.

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15. The assembly of claim 13, wherein the belt teeth each include a compressible projection near a distal end of the teeth.

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The assembly of claim 15, wherein the teeth engaging surfaces include a first portion having a first radius of curvature, a second portion having a second radius of curvature adjacent the first portion and a third portion having a third radius of curvature extending between the second portion and the projection.

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The assembly of claim 16, wherein the teeth each have a height dimension and wherein the first radius of curvature is approximately one-sixth of the height dimension, the second radius of curvature is at least six times the first radius and the third radius of curvature is at least three times the first radius.

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The belt of claim 16, wherein the first, second and third portions establish the concave portion of the engaging surface and the projection establishes a convex portion of the engaging surface.

19. The assembly of claim 18, wherein the projection has a first section with a first projection radius of curvature adjacent the third portion and a second section with a second projection radius of curvature extending between the first section and the distal end.

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20. The assembly of claim 19, wherein the height dimension is approximately 7 mm, the first radius is approximately 1.2 mm, the second radius is approximately 8 mm, the third radius is approximately 4.5 mm, the first projection radius is approximately 3 mm and the second projection radius is approximately .5 mm.

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21. The belt of claim 13, including a second plurality of teeth on the inner side and wherein the plurality of teeth on the outer side have a first pitch that is different than a second pitch of the second plurality of teeth.

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22. The belt of claim 21, wherein the second pitch is finer than the first pitch.